Patriot
Environmental Services

Prepared & Professional

Services

Patriot provides a full range of vertically-integrated environmental services and solutions.

- ✓ Single source to insure environmental project completion
- ✓ Unlimited scope, size, or complexity

Inland Response Health and Safety Aspects

- **Health and Safety Aspects** – Same general 10-subject OSHA required H&S topics to cover an uncontrolled hazardous waste site (i.e. spill exclusion zones), with additional special safety messages not typically associated with marine spills :
  - Trench / Culvert Operating Environments
  - Distracted / Defensive Driving Awareness
  - Elevated Work / Fall Protection
  - Sustained Rain / Mudslide Awareness
  - Swiftwater / Rising or Dropping Water Awareness
  - Heat Stress / Cold Stress
  - Lyme Disease
  - Poison Oak / Poison Ivy / Poison Sumac
  - Mountain Lion / Bear / Other Large Mammal Awareness
  - Rattlesnake / Other poisonous and Non-Poisonous Snake Awareness
  - Stinging and Biting Insects
  - Sustained Night Operations
  - Public Health Concerns

Zero Accidents, Period.

Inland Response Strategy Training and Preparation

- Training on Specialized Equipment
- New Equipment Purchase
- Specialized Equipment Subcontractor Network
- Establishing Additional Pre-Staging Locations
- Establishing New Customer Relationships and Familiarity


EPA


BNSF
FAST TANK®


MT 0878 BA
KOOTENAI
WRI
#4
LOCHSA
WRI
DUCKWORTH


KOBELCO

Facility Locations

Patriot currently has facilities throughout California and is moving into neighboring states with near-term plans to expand into other regions of the U.S. Our current facilities include:

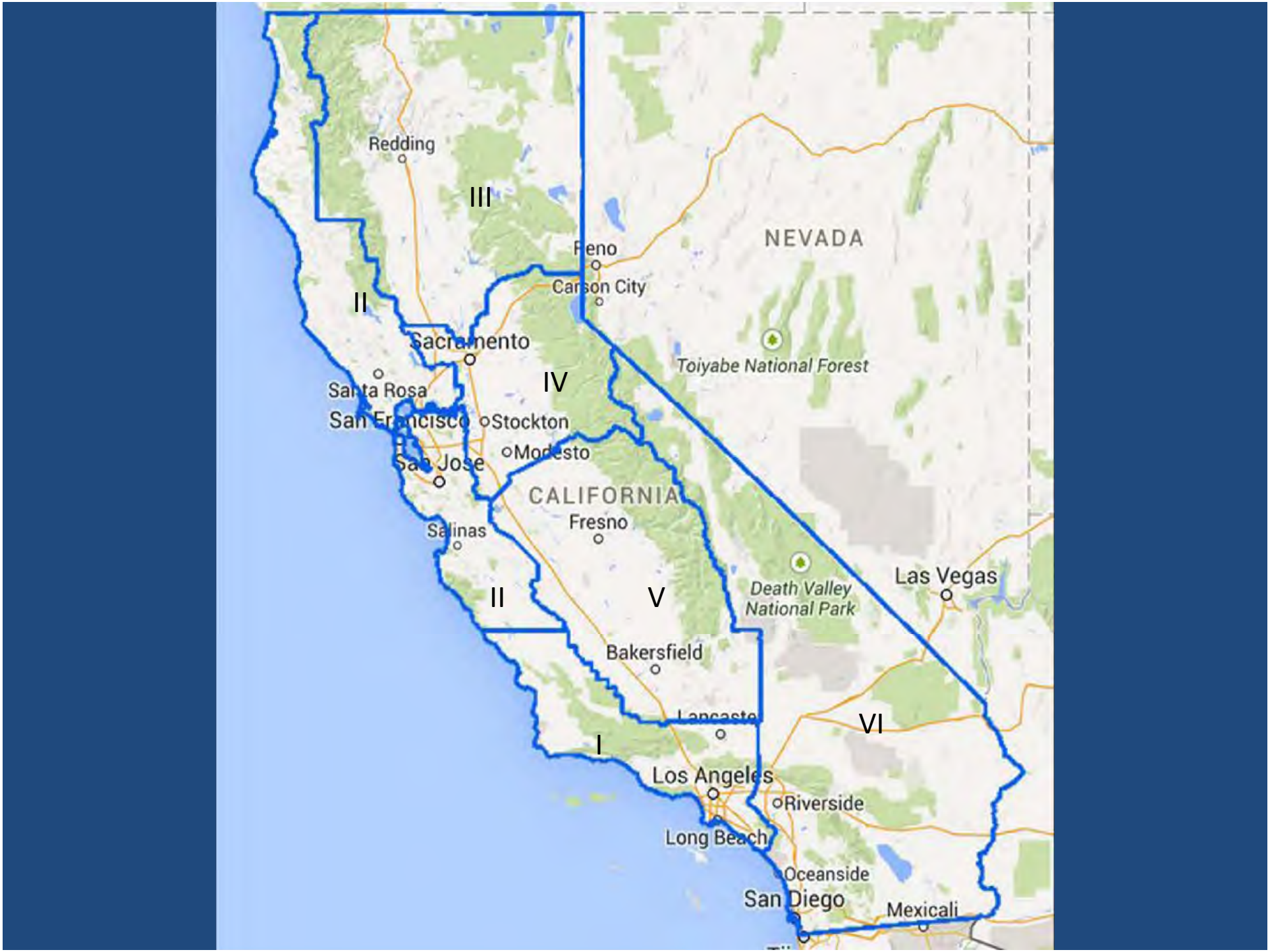
- Long Beach (Wilmington) – Headquarters
- Bakersfield (two Locations)
- Fresno
- Las Vegas, NV
- Ontario
- Orange (Patriot WasteWater)
- Phoenix, AZ (two locations)
- Richmond (two locations)
- Sacramento
- San Diego
- Santa Clarita
- Ventura

Office Locations

Regulatory Compliance

- Additional Inland Response Ratings in Newly Established Response Planning Areas (RPA's)
- Marine 2, 4, 6, 12, 24 vs. Inland and Inland On-Water 6, 12, 24 Hour Response Framework
- SCAQMD Rule 1166 Compliance

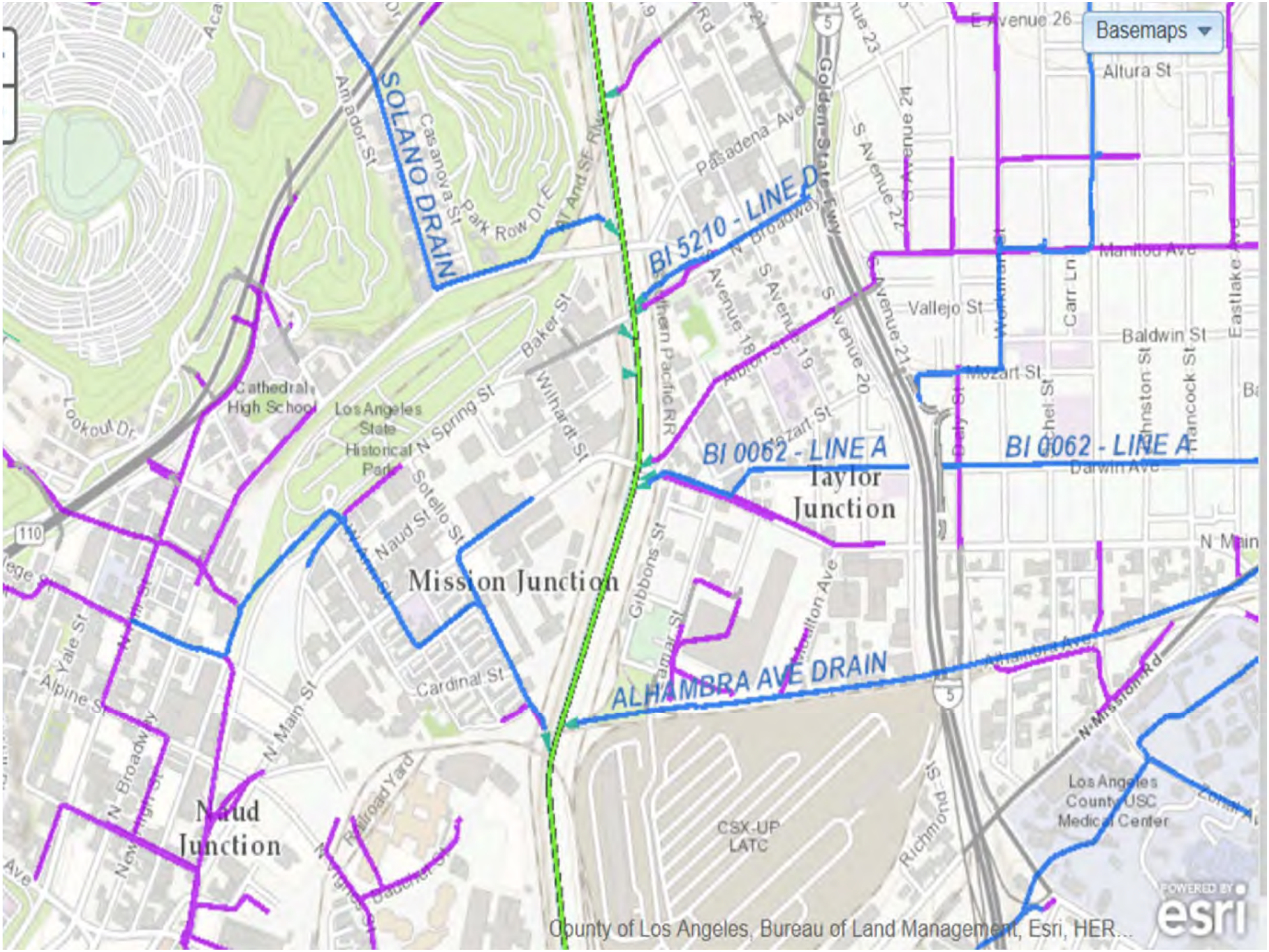
Equipment Arrival Times	Within 6 hours	Within 12 hours	Within 24 hours
Containment of the Spill	10%	50%	100%
Minimum Oil Recovery Capability (Whichever is the Lesser)	820 bbls, or Sufficient on-water or terrestrial Response Resources to respond to 50% of the RWCS	4,100 bbls or 75% of the RWCS	8,214 bbls, or Sufficient on-water or terrestrial Response Resources to respond to the remaining 25% of the RWCS

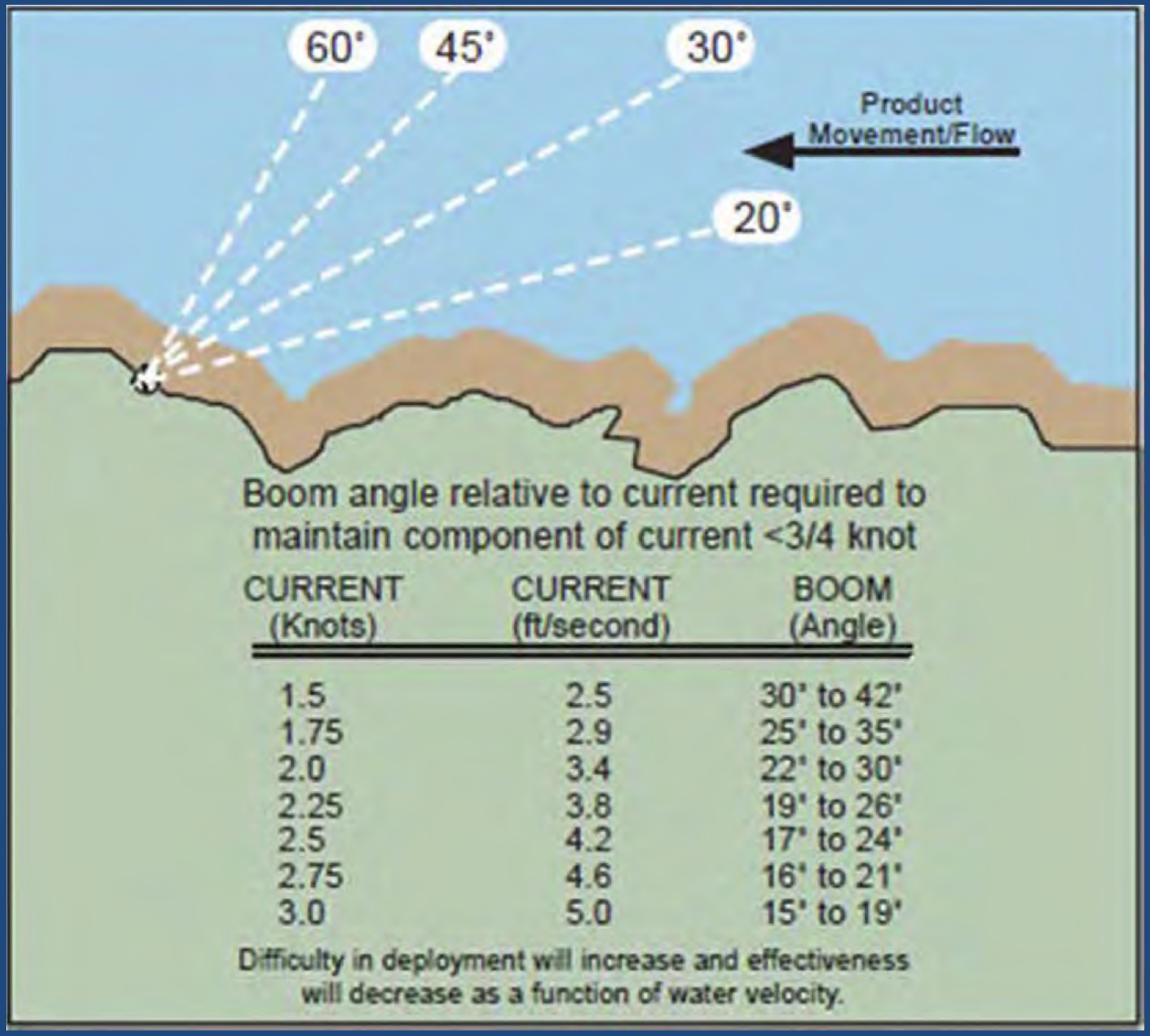

Redding
III
NEVADA
Reno
Carson City
II
Sacramento
Toiyabe National Forest
IV
Santa Rosa
San Francisco
Stockton
Modesto
San Jose
CALIFORNIA
Fresno
Salinas
Death Valley
National Park
Las Vegas
II
V
Bakersfield
VI
I
Los Angeles
Riverside
Long Beach
Oceanside
San Diego
Mexicali


CAT

Implementing Response & Cleanup Techniques

- Emphasis on Responding to the Leading Edge vs. to the Source Location (Especially in Urban and Suburban Storm Drain Systems)
- Choices: Use Typical Water Environment Response Resources; Use Construction Equipment and Surrounding Soil or Combination Thereof
- NOAA / API / SCAA: Guidelines for Minimizing Environmental Impacts of Freshwater Spill Response – Broken Down by: Habitat Type, Petroleum Type (Gasolines, Diesels, Medium Oils and Heavy Oils) and Response Strategies
- Class V or Sinking Petroleum Products
- Ice and/or Snow
- Moving or Swiftwater Environments – Cross-River Trolley, Boom Vanes & Current Buster, Boom Angles and Anchors
- Impacts Associated With Cleanup Techniques
- More Potential for Impact to Sensitive or Critical Habitats, Waterfowl Nesting Areas or Flyways, and Threatened and/or Endangered Species


Basemaps
SOLANO DRAIN
BI 5210 - LINE D
BI 0062 - LINE A
BI 0062 - LINE A
ALHAMBRA AVE DRAIN
Mission Junction
Taylor Junction
Naud Junction
Cathedral High School
Los Angeles State Historical Park
CSX-UP LATC
Los Angeles County USC Medical Center
Altura St
Vallejo St
Baldwin St
Mozart St
Cardinal St
Baker St
Wilhardt St
Gibbons St
Pasadena Ave
Golden State Fwy
Southern Pacific RR
Lookout Dr
Alpine St
Yale St
N Broadway
N Main St
Naud St
Solello St
N Spring St
Casanova St
Park Row Dr E
Amador St
Avenue 26
Avenue 24
Avenue 22
Avenue 21
Avenue 20
Avenue 19
Avenue 18
Avenue 23
Carr Ln
Johnston St
Hancock St
Eastlake Ave
Manitou Ave
Darwin Ave
N Mission Rd
Richmond St
Hamilton Ave
Lamar St
Railroad Yard
110
5
County of Los Angeles, Bureau of Land Management, Esri, HER...
esri



Boom angle relative to current required to maintain component of current <3/4 knot

CURRENT (Knots)	CURRENT (ft/second)	BOOM (Angle)
1.5	2.5	30° to 42°
1.75	2.9	25° to 35°
2.0	3.4	22° to 30°
2.25	3.8	19° to 26°
2.5	4.2	17° to 24°
2.75	4.6	16° to 21°
3.0	5.0	15° to 19°

Difficulty in deployment will increase and effectiveness will decrease as a function of water velocity.

Table 9. DIESEL-LIKE OILS: Summary of relative environmental impact from response meth shoreline habitats.

Response Method	SHORELINE HABITAT							
	Bedrock	Man-Made	Sand	Vegetated Shores	Sand and Gravel	Gravel	Mud	Wetlands
PHYSICAL RESPONSE METHODS	1,2,8*	1,8	3,4	9	5	6	7,9	10
Natural Recovery	A	A	A	A	A	A	A	A
Booming	–	–	–	–	–	–	–	–
Skimming	–	–	–	–	–	–	–	–
Barriers/Berms	–	–	–	–	–	–	–	–
Physical Herding	–	–	–	–	–	–	–	–
Manual Oil Removal/Cleaning	B	A	B	B	B	B	D	D
Mechanical Oil Removal	–	–	B	C	C	D	D	D
Sorbents	A	A	A	A	A	A	A	A
Vacuum	B	B	B	B	B	B	C	B
Debris Removal	A	A	A	B	A	A	B	B
Sediment Reworking	–	–	B	D	B	B	D	D
Vegetation Removal	–	–	–	B	–	–	–	C
In-Situ Burning	B	B	–	B	–	–	C	B
Flooding	A	A	A	A	A	A	A	A
Low-Pressure, Cold-Water Flushing	A	A	B	A	A	A	C	A
High-Pressure, Cold-Water Flushing	B	A	D	C	C	B	D	D
Low-Pressure, Hot-Water Flushing	C	B	C	D	C	C	D	D
High-Pressure, Hot-Water Flushing	D	B	D	D	D	D	D	D
Steam Cleaning	D	C	–	–	D	D	–	–
Sand Blasting	D	C	–	–	–	–	–	–
CHEMICAL RESPONSE METHODS								
Dispersants	–	–	–	–	–	–	–	–
Emulsion Treating Agents	–	–	–	–	–	–	–	–
Visco-Elastic Agents	–	–	–	–	–	–	–	–
Herding Agents	–	–	–	–	–	–	–	–
Solidifiers	B	B	B	D	–	–	D	D
Chemical Shoreline Pretreatment	I	I	I	I	I	I	I	I
Shoreline Cleaning Agents	–	B	–	I	–	–	D	I
BIOLOGICAL RESPONSE METHODS								
Nutrient Enrichment	C	C	B	B	B	B	I	I
Natural Microbe Seeding	I	I	I	I	I	I	I	I

*Key to ESI codes in Table 5 on page 12.

The following categories are used to compare the relative environmental impact of each response method to habitat for each oil type, using the following definitions:

A = May cause the least adverse habitat impact.

B = May cause some adverse habitat impact.

C = May cause significant adverse habitat impact.

GRP's vs. ACP's

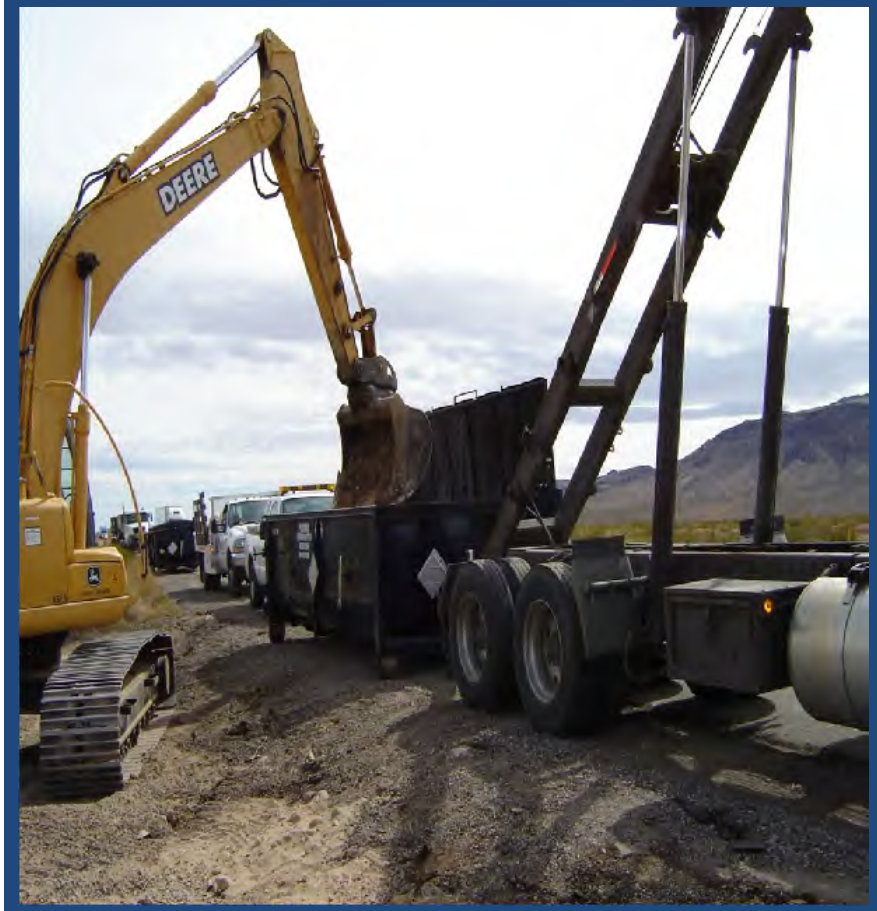
- GRP's that have been established, Strategies are Suggestions
- On-going Production of New GRP's by New Plan Holders and LEPC's comprised of industry representatives, federal, State, and local government agencies, public health agencies, tribal representatives and other stakeholders.
- ACP Strategies are established for Sensitive Sites along the entire CA coastline
- GRP strategies have only been established for:
  - Upper Sacramento River from Dunsmuir to Red Bluff
  - Lake Tahoe/Truckee River and other creeks in the vicinity (Plus NV)
  - East and West Walker River in Mono County (Plus NV)
  - Lower Colorado River from Hoover Dam to the Mexican Border
  - Carson River in Alpine County (Plus NV)
  - (Draft) UPRR portions of the North and Middle Forks of the Feather River in Butte and Plumas Counties

Communications

- Many Remote Areas Require Radio and/or Radio-Repeater Use, Especially in Mountainous Terrain Vehicle Enabled Repeaters Sometimes Required
- Spare/Reserve Batteries and Charging Stations
- “Forward” Command Center Dedicated to Operations

Waste Management

- Typically Much More Solid Waste Generated than Liquid Waste
- Stockpiles and Bins Instead of Tanks



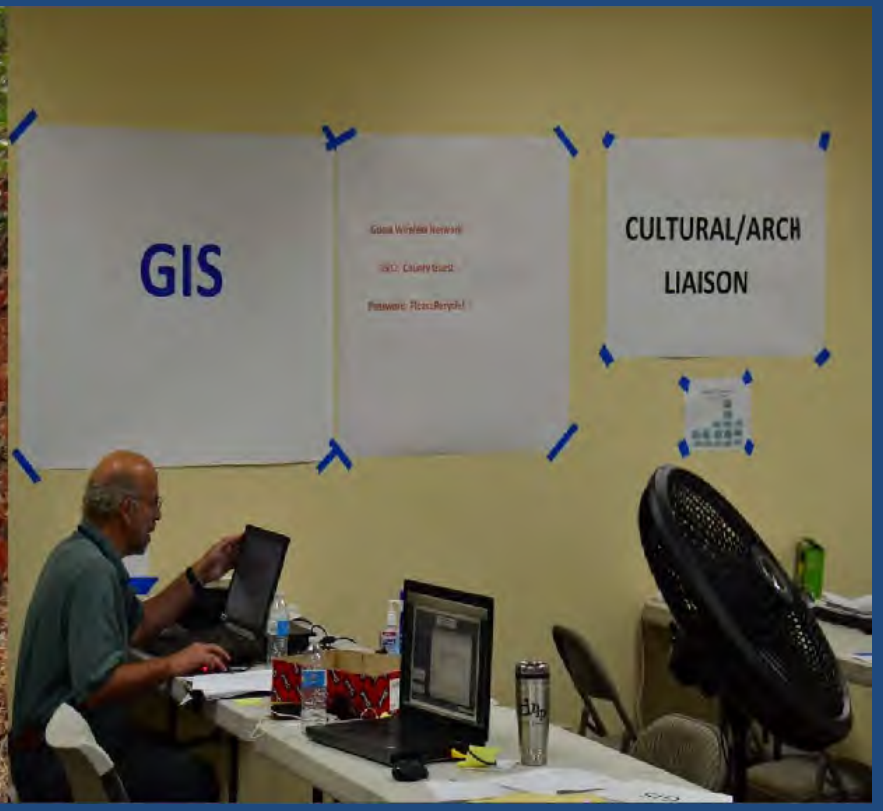
Infrastructure Repair

- RP Goal is to Return the Pipeline or Rail Line Back Into Service ASAP


9004
9004

Public Relations

- More Likely to Impact Native American or Other Culturally Sensitive Lands
- Much Higher Media Exposure and Public Access
- “NIMBY” Issues/ Uncooperative Residents



Questions? Comments? Thank You